Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

9. The calcaneum is very short and largely inferior.
10. The phalanges represent several toes, and are very short and stout.

To these may be added three external characters, which directly result from the osteological, namely:

11. The possession of a proboscis. This is proven by the extreme shortness and stoutness of the free part of the nasal bones; by the very short cervical vertebræ, and by the fact that the nasal and premaxillary bones are deeply excavated at their extremities, with surrounding osseous eminences, for the origin of the muscles of the trunk.
12. The extension of the femur below the body, so that the leg was extended with the knee below and free from the body, as in elephants, monkeys and man.
13. The short subplantigrade foot, so different from the digitigrade character of other ungulates. The inferior surface of the calcaneum looks as though it furnished insertion for a ligamentous pad.

Other characters, common to *Proboscidea* and some other ungulates, are —

14. The scapula acuminate in outline above the spine, with a very short coracoid and alate spine.
15. Broad truncate occiput with widely separated temporal fossæ.
16. The greatly expanded iliac bones.

The presence of canine teeth and horns had been stated by Professor Marsh as characteristic of a new order. Neither of these were regarded by Professor Cope as sufficiently important for such an interpretation, since in Artiodactyles, and even in the Ruminant division, we have every variety of condition in both these points; *Moschidæ*, *Cephalophus* and *Hydropotes* were hornless, and some of these and some deer had canines. The wart hog has compound molars, no lower incisors and huge tusks. But the difference in this point from elephants he thought would disappear if, as was probable, the tusks of elephants should prove to be canines and not incisors. In these animals, as in *Eobasileus*, the tusk is enclosed between the maxillary and premaxillary, which is not the case with the outer incisors.

REVIEWS AND BOOK NOTICES.

THE GEOLOGY OF THE SEA BOTTOM.*—This is a very important contribution to the study of the bottom of the seas which is now receiving so much attention. Intended at first to be limited to an examination of the sea bottom of the French coast, it was gradually extended as far as the materials were accessible, such as the results of the deep sea soundings made by the Hydrographic bureaux of the European and American governments, to the principal seas of the globe. It is of course more complete for the seas borderring on France, yet it is a fair beginning of a subject which hitherto has received but little attention. The author has treated his materials with great success and has sketched out the broad outlines of a most fruitful line of inquiry.

---

* A. Delesse. Lithologie des Mers de France et des Mers principales du globe. Paris. Dec., 1871. 2 vols. 8vo. pp. 479; 135: 3 pls., folio with cuts in text.

It is the first systematic attempt made to classify the deposits now going on owing to the agencies at work on the surface of our earth; to show how unequally the deposits are made, how greatly the nature of these deposits and the existing topography are modified by the direction of the prevailing winds and oceanic currents, and more especially how materially the geology of the shores of the river basins, and of submerged rocks subject to the action of the waves, influences the mineralogical constituents of the deposits formed at any one point.

The maps which accompany this volume are the results of the most careful examination and analysis of the materials brought up by the lead, or thrown on the shores by the action of the waves, or resulting from the decomposition of the cliffs along the coast line, of the banks of the rivers forming the different hydrographic basins, from their source as they pass through the different geological formations to their mouth. The fate of the different mineralogical constituents is carefully followed and the effect each has upon the bottom of the sea into which the basin drains carefully noted.

The effect of the atmosphere in carrying dust in suspension, of the direction of the prevailing winds, especially on the seacoasts leading to the formation of dunes, and the effect produced by the unequal distribution of rain as an erosive agent in the different hydrographic basins are very accurately considered. The amount of material held in solution and suspension in the rivers of France is shown to be enormous and to depend of course mainly upon the geological composition of the rocks of the different hydrographic basins influencing, to a great extent, the condition of the navigation of the outlets of the larger rivers, and the formation and preservation of the harbors at the mouth of the navigable rivers. The power of transportation and erosion of fresh water and rain, as shown by the action of rivers, is slight compared to the action of the sea; the mechanical results produced by waves, by permanent currents, by the tides and prevailing winds, are more varied of course than those of the rivers. The action of the sea extends over a great area and acting at a great depth is the most powerful agent in the rearrangement and final distribution of the materials brought down by the rivers.

The action of internal agents produced by eruptions, though undoubtedly very powerful, is unfortunately inaccessible and we can only guess at what might happen from a study of such phenomena as the submarine volcanoes of the Mediterranean, the Caspian sea, and remember that many of the phenomena which produce instant visible changes on the surface of the globe must be acting with equal or greater efficiency and as frequently on the bottom of the sea.

The agency of organisms in determining the constitutions of the bottom of the sea is only introduced as far as the action of the invertebrates of the coast of France can throw any light upon the subject, and no attempt has been made by the author to do more than point out, what is well known to all students of marine zoology, the correlation between the fauna and the physical structure of the coast. He indicates the dependence of special forms or certain floras upon a sandy or rocky bottom, or a gravelly shore, or the different features presented by a muddy shore. This is perhaps the most unsatisfactory part of the work, and it is a great pity that the description of the agency of animal life upon the formation of the sea bottom should have been limited to the comparatively uninfluential agencies at work at the present time on the coast of France, and that only slight allusion should have been made to the all-important part which corals now play in the fashioning of the sea bottom of so large a part of our globe.

The maps are admirably engraved and as far as they relate to France and Europe of great accuracy. A few unfortunate errors have crept in relating to the hydrography of the Hudson and Susquehanna rivers and the connection of the great Lakes, which are undoubtedly due to the want of supervision of a part of the work during the Prusso-French war. The map of the hydrographic basins of France is especially worthy of notice. He has completed the survey of the seas of the present time by a very successful attempt to restore and map out the ancient seas and general topography of France during the successive geological periods, and to give a succinct history of the changes which have taken place to bring about the present topographical features of France.

The data from which the conclusions of Delesse have been drawn are carefully tabulated and published as an independent appendix to the general text. This work was nearly completed at the breaking out of the war, and the unavoidable delay occasioned will account for the absence of reference to much that has been done of late by the Scandinavian, American and English governments.

These matters of omissions are of slight importance, and we recommend this suggestive volume to all who are interested in the study of geology as deduced from agencies now at work on the surface of our globe.—A. AGASSIZ.

HANDBOOK OF BRITISH BIRDS.*—Justly observing, of several admirable works on British Ornithology, that "they do not distinguish with sufficient clearness the species which are truly indigenous to Great Britain from those which are but rare and accidental visitants; nor do they indicate with sufficient authority the scientific nomenclature which should be adopted"— the author undertakes to supply these deficiencies in a Handbook which is not "intended to rival or supplant existing or forthcoming textbooks on the subject, but to assist students in a manner and to an extent which has not been contemplated in the works referred to." "The claims of species to rank as British, the proper scientific names which each should bear, the *habitat* of the rarer visitants, and the frequency or otherwise of their occurrence are points to which attention is almost exclusively directed." The author has thus had a definite plan of work, which has been unquestionably executed with fidelity and ability; and though we are not prepared to judge the accuracy of his statements in detail, we should say that they show intrinsic evidences of reliability, both from the author's evident familiarity with his theme, and from the obvious care with which he has compiled and digested the statistics of those observations which, in the nature of the case, he cannot have personally made or verified.

Following an introduction which contains much miscellaneous information besides a comprehensive survey of the matter in hand, comes a freely annotated list of the residents, migrants and annual

---

* A Handbook of British Birds showing the distribution of the resident and migratory species in the British Islands, with an Index to the Records of the Rarer Visitants. By J. E. HARTING, F.L.S., F.Z.S., etc. etc. London. 1872. 8vo. pp. xxiv, 198.